CDC /NCID
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR INFECTIOUS DISEASES

Volume 6 / No. 3 / May – June 1997

FOCUS

Communicating NCID's prevention and control programs for new and reemerging infectious diseases

Message from the Director

Dear Colleagues:

Emerging infectious diseases have been a priority for program development in NCID for several years. Progress has been made in the areas of surveillance, research, prevention, and infrastructure development, but much more remains to be done. To create a forum for discussion on current status and future directions, NCID will join with partner agencies and organizations in sponsoring the International Conference on Emerging Infectious Diseases in Atlanta on March 8-12, 1998.

The purposes of the conference are to 1) exchange scientific and public health information on global emerging infectious disease issues; 2) present programs and activities that address emerging infectious disease threats; 3) identify program gaps; 4) increase awareness in the public health and scientific communities of emerging infectious disease issues; and 5) enhance partnerships.

The call for abstracts and registration information will be posted on the CDC NCID home page (http://www.cdc.gov/ncidod/ncid.htm) and published in *Emerging Infectious Diseases* and other professional publications. Organizations wishing to be cosponsors may contact Stephen Morse, Ph.D., conference coordinator, at 404-639-3559.

James M Hughes

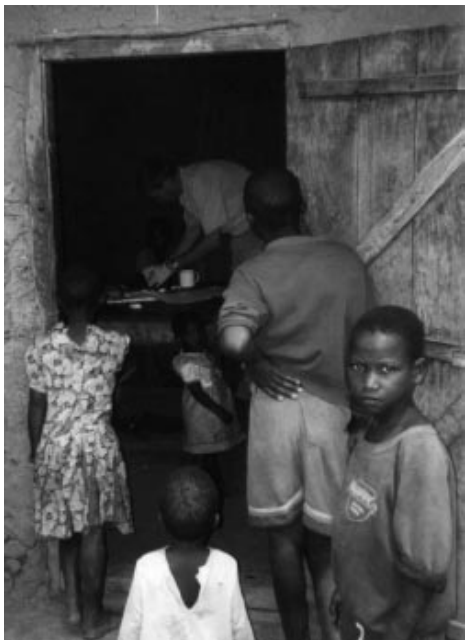
James M. Hughes, M.D.

Focus on Vector-Borne Infectious Diseases

DVBID investigates epidemic O'nyong-nyong fever in Uganda

In the summer and fall of 1996, health officials in Uganda recognized an epidemic of febrile illness with skin rash and debilitating joint pains. The epidemic was centered in the rural district of Rakai, south-central Uganda, an area with few paved roads and virtually no comunications system. After laboratory studies at CDC identified O'nyong-nyong virus in several patient specimens, the Ugandan Ministry of Health asked CDC to collaborate in an international investigation of the epidemic, establish a diagnostic capability in Uganda, conduct vector and vertebrate host studies, and recommend control measures. The international team included scientists from the Ministry of Health, the Uganda Virus Research Institute, CDC, the World Health Organization, the Kenya Medical Research Institute, and Makerere University.

During 1959-1962, the mosquito-borne O'nyong-nyong virus caused a major central African epidemic that began in northern Uganda and ultimately involved an estimated 2 million persons in an area extending from Mozambique to Senegal. Although the disease was never fatal, it was associated with significant short-term illness. The epidemic was spread by two of the region's major malaria vectors, *Anopheles gambiae* and *An. funestus* mosquitoes. No O'nyong-nyong fever cases were documented between 1962 and 1996. The natural reservoir hosts of O'nyong-nyong virus are unknown.



Eduard Sanders (inside building) prepares to obtain serum specimens from Uganda residents.

NCID staff who took part in the field investigation during January and February 1997 were entomologists Barry Miller and Tom Burkot, and epidemiologists Eduard Sanders and Roy Campbell, all of the Division of Vector-Borne Infectious Diseases.

Preliminary results suggest that the epidemic involved thousands of persons throughout the Rakai District, especially those residing near lakes and swamps, where *An. funestus* is common. Two adjacent Ugandan districts, and possibly an adjacent district of northern Tanzania, were also involved.

continued on page 2

O'nyong-nyong fever – continued from page 1

Virus transmission declined, but did not disappear, with the onset of the region's major dry season in mid-December. Health officials are concerned that the epidemic could extend into other Ugandan districts and surrounding countries during the region's current spring rainy season. The investigators recommended 1) that surveillance for O'nyong-nyong fever cases be heightened throughout the region, 2) that residents in affected areas increase personal protection measures, including use of mosquito repellents and bed nets, and 3) that health care workers and the public be taught how to recognize and treat this illness.

Uganda, and particularly the Rakai District, have been heavily impacted by the HIV/AIDS pandemic. The international team will also attempt to determine whether HIV-positive individuals are at increased risk of developing O'nyong-nyong fever (as opposed to silent infection) when infected with O'nyong-nyong virus. ■

Focus *is distributed bimonthly to National Center for Infectious Diseases (NCID) staff and CDC colleagues and constituents by Publications Activity, Office of Health Communication, NCID.*

Centers for Disease Control and Prevention
Director David Satcher, M.D., Ph.D.

National Center for Infectious Diseases
Director James M. Hughes, M.D.

Office of Health Communication
Meredith Hickson, M.P.H.
Cheryl Lackey, M.P.H., C.H.E.S.

Managing Editor Carol Snarey, M.A.

Writer-Editors Mary Bartlett
Lynne McIntyre, M.A.L.S.
John O'Connor, M.S.
J Shaw

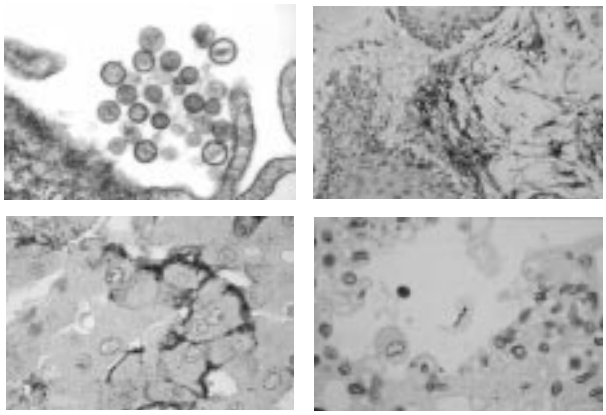
Design/Desktop Publishing Sara Cote

Visit the National Center for Infectious Diseases on the World-Wide Web at: http://www.cdc.gov/ncidod/ncid.htm

Focus on Viral and Rickettsial Diseases

NCID reorganizes pathology activities

Through the application of state-of-the-art immunodiagnostic, ultrastructural, and nucleic acid probe technologies, the Molecular Pathology and Ultrastructure Activity (MPUA), Division of Viral and Rickettsial Diseases (DVRD), has since its inception in 1991 contributed invaluable scientific insights into the etiologic and pathogenetic features of a number of emerging infectious diseases.

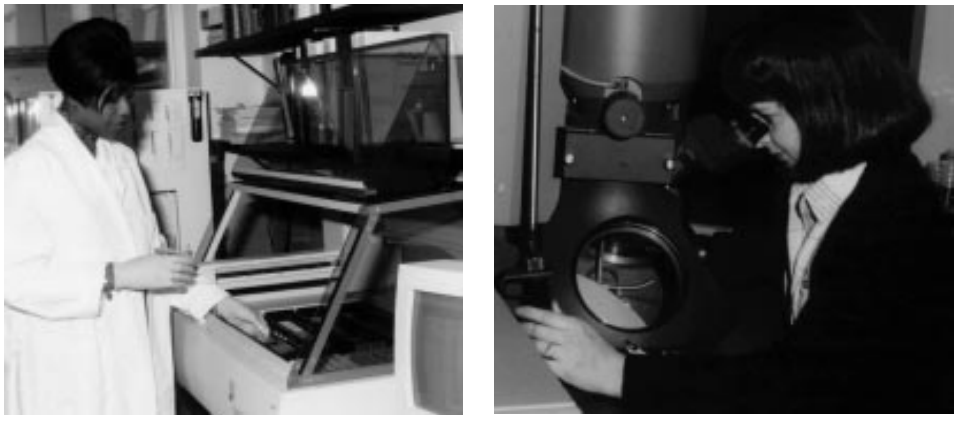


MPUA studies have played an important role in the success of CDC investigations of (clockwise, from top left) hantavirus pulmonary syndrome in the United States and South America (electron micrograph of Sin Nombre virus, causative agent of HPS); Ebola hemorrhagic fever in Zaire and Gabon (immunostain of antigen in skin tissue); Lassa fever in Sierra Leone (immunostain of infected liver tissue); and leptospirosis in Nicaragua (immunostain of infected lung tissue).

Under the leadership of Sherif Zaki, the group has provided highly specialized diagnostic support to recent CDC epidemic investigations in the United States and worldwide (see figure). In each case, the group's findings have been critical to identifying the infectious disease problem at hand and developing recommendations for prevention.

To enable such studies to be applied more readily across a broader spectrum of infectious diseases, NCID Director James Hughes has proposed the establishment of an expanded pathology activity capable of addressing the center's disease-specific priorities and serving as a scientific and technical resource to all NCID divisions, programs, and offices. The reorganization consolidates most of NCID's pathology resources into MPUA, which will be renamed the Infectious Disease Pathology Activity (organizationally, it will remain in the Office of the Director, DVRD). The expanded activity consists of the Office of the Chief and two units: the Bacterial, Mycotic, and Parasitic Diseases Unit and the Viral and Rickettsial Diseases Unit.

Four staff positions and all functions of the Pathology Activity,



Tara Ferebee (L) performs an immunostaining procedure and Cynthia Goldsmith (R) examines tissue under an electron microscope. Cutting-edge technology is used to study how infectious agents cause damage to cells, tissues, and organs and trigger the host immune response.

continued on page 3

Focus on Hospital Infections

HIP begins international bloodstream infection study

The Hospital Infections Program (HIP) has begun a study that is designed to reduce illness and death from bloodstream infections (BSIs) in hospitalized patients in international settings.

At present, the role of BSIs as a cause of fever in hospitalized patients in many developing countries, particularly those in which human immunodeficiency virus (HIV) is prevalent, is largely unknown, because few studies have been done to determine their cause or develop preventive measures.

A collaborative effort between HIP and the national health organizations of several countries, the study will identify the most common causes of BSIs, especially in those patients with HIV-1 infection. This information will then be used to suggest appropriate diagnostic methods, treatment, and prevention for BSIs.

The study was proposed by HIP's Lennox Archibald (EIS), who performed a similar study in Tanzania before joining CDC. At each of the proposed study sites, adult inpatients with fever (an indicator of infection, including BSI) will be examined, and blood cultures will be obtained and processed by using a simple but comprehensive method.

Lennox Archibald

Work has already begun in Thailand, where Drs. Archibald and Clifford McDonald (HIP, EIS) have found that nearly 40% of the first 100 patients evaluated had a BSI.

"We believe that the study will lead to expansion and improvement in clinical microbiologic methods, resulting in more accurate diagnosis of BSIs. In turn, this will lead to more appropriate treatment rather than empiric therapy of febrile patients," Dr. Archibald said.

Because local technicians and doctors will be trained in microbiologic methods, the study is also expected to contribute to improved microbiologic services at the study hospitals. Further, it is expected that enhanced surveillance for BSIs will continue at the hospitals after the study is completed. Such improvements will lead to better patient therapy and heightened surveillance for emerging pathogens. ■

continued from page 2

Scientific Resources Program, have been transferred to the expanded activity in DVRD, and five new positions have been added. Personnel in the pathology activity currently include four pathologists (Dr. Zaki, Jeannette Guarner, Wun-Ju Shieh, and Ed Ewing), three electron microscopists (Charles Humphrey, Cynthia Goldsmith, and Elizabeth White), three histotechnologists (Patricia Greer, Tara Ferebee, and Jeanine Bartlett), a scientist administrator (Lisa Coffield), a secretary (Ijlal Roy), two visiting fellows (Yong Cheng Sun and Xing He Zhang), and a fellow (Avery Brewer). Additional staff to be recruited include one veterinary pathologist, one microbiologist, and one histotechnologist.

According to Dr. Hughes, "The new structure will increase the flexibility and efficiency of NCID's pathology staff to provide both specialized and broad-based molecular pathologic diagnosis of emerging infectious diseases and foster the advancement of research in these areas." ■

Partners in Prevention

In September 1994, a cooperative agreement between the Division of Infectious Diseases, Emory University School of Medicine, Atlanta, and NCID, CDC, established a Postdoctoral Fellowship Training Program (PFTP) in Infectious Diseases. The program addresses a key problem facing the United States—the shortage of physicians trained to conduct basic and applied research on infectious disease.

The first fellow in the program, Richard Hengel, works with Steve McDougal, Immunology Branch, Division of AIDS, STD, and TB Laboratory Research (DASTLR). They have studied the role of neutralizing antibody in the perinatal transmission of human immunodeficiency virus (HIV) and currently are studying the phenotype of T cells after the introduction of protease inhibitors for HIV infection.

William Bower, 1995 fellow, works with Harold Margolis, Hepatitis Branch, Division of Viral and Rickettsial Diseases. Dr. Bower has implemented a pilot study to determine the epidemiology and etiology of fulminant hepatitis.

Ronald Reisler, who entered the fellowship program in 1996, is performing amplified reverse transcriptase testing on serum samples from pediatric patients and comparing the test's ability to predict HIV outcomes with that of RNA PCR. He works with Walid Heneine, Retrovirus Diseases Branch, DASTLR.

The Emory/CDC PFTP in Infectious Diseases is a unique opportunity for physician-scientists to develop state-of-the-art clinical, epidemiologic, and research skills in the public health aspects of infectious diseases. For more information, contact David Stephens, M.D., Emory University School of Medicine, 404-616-3600. ■

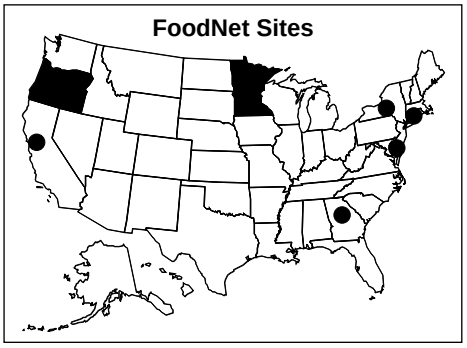
Focus on Bacterial and Mycotic Diseases

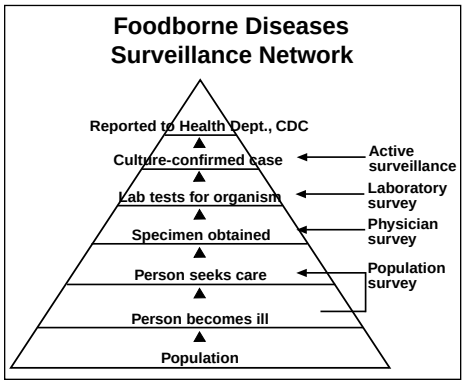
FoodNet captures data on foodborne diseases

In its first year of operation, the Foodborne Diseases Active Surveillance Network (FoodNet) has produced some intriguing information on the occurrence of foodborne diseases in its surveillance sites. Located in the Division of Bacterial and Mycotic Diseases (DBMD), FoodNet is a component of CDC's Emerging Infections Program (EIP), which was established in 1994 to improve surveillance, research, and prevention and control of emerging infectious diseases.

Through FoodNet, CDC and other agencies collaborate in conducting active surveillance for foodborne diseases and carrying out other epidemiologic studies at seven EIP sites around the United States (map). FoodNet aims to 1) describe the epidemiology of new and emerging bacterial, parasitic, and viral foodborne pathogens; 2) estimate the frequency and severity of foodborne diseases that occur in the United States each year; and 3) determine how much foodborne illness results from eating specific foods, such as meat, poultry, and eggs. To achieve these goals, FoodNet personnel are concentrating on five activities: active laboratory-based surveillance, survey of clinical laboratories, survey of physicians, survey of the population, and case-control studies.

Active surveillance, in which investigators frequently contact microbiology laboratories to find new cases of foodborne disease and report these findings electronically to CDC,





enables more precise calculation of the incidence of many foodborne infections. This has always been difficult to estimate because many culture-confirmed infections are not reported. FoodNet is monitoring isolations of *Salmonella, Shigella, Campylobacter, Escherichia coli* O157:H7, *Listeria, Yersinia,* and *Vibrio* organisms at the seven surveillance sites.

Preliminary findings from 1996 show regional and seasonal differences in the isolation of some of the pathogens, especially *Campylobacter.* The rate of *Campylobacter* isolation varied from 14 per 100,000 population in Georgia to 58 in California. The rate for *Salmonella* infection in children under 1 year ranged from 73 in Connecticut to 270 in Georgia. In general, several pathogens were more likely to be isolated in the summer months.

According to Fred Angulo, medical epidemiologist, DBMD, these differences could be related to such things as food-handling practices, the use of health care, the level of contamination of specific food items, or variations in physician practices. Culturing practices may also differ for some pathogens, but this does not account for the variations in others. Through additional studies and other activities of FoodNet, researchers will attempt to resolve these questions and support FoodNet's goal of advancing the epidemiology of foodborne diseases. ■

IDEA Place

"Distance learning" (DL) is not just satellite video conferences. DL is any instruction in which teacher and learner are separated by distance or time. The instruction may be provided in several ways, including printed materials sent by mail, telephone conferencing, and computer-based instruction. DL meets education and training needs with limited time and resources. A CDC-wide DL Coordinating Committee is discussing ways to make DL activities more effective in meeting the agency's communication needs.

In 1997, NCID received $100,000 to support NCID DL projects that build skills and increase the capacity to conduct DL programs. Through a competitive application process, conducted by the NCID Health Communication Working Group, 11 applications were received, and the following three projects were funded.

1. The Division of Vector-Borne Infectious Diseases will update a slide/tape series on dengue fever for distribution to schools and other partners in their WHO Collaborating Center network. (Gary Clark)
2. The Hospital Infections Program (HIP) will conduct an interactive video teleconference on postexposure prophylaxis for HIV, targeted to hospital and medical care professionals. (Sara Critchley)
3. HIP also will sponsor a video teleconference on control of vancomycin-resistant enterococci, targeted to hospital infection control and medical care staff. (Ronda Sinkowitz)

Cheryl Lackey, M.P.H.
Office of Health Communication
NCID

Focus on Scientific Resources

Researcher develops method of isotype switching

Todd Parker, Biological Products Branch, Scientific Resources Program (SRP), recently developed a CDC protocol that enhances the isolation of isotype switch variant clones. In antibody-based tests (ELISAs), IgG isotypes are more effective than IgM.

Switching parental hybridomas in vitro to downstream switch variant clones that produce more desirable monoclonal antibodies has required either labor-intensive subcloning or an expansive cloning and sorting using a fluorescent-activated cell sorter (FACS). Using parental hybridomas, with surface and secretory IgM, researchers enriched downstream switch variant clones, producing class IgG. This was accomplished by a selective complement-mediated lysis of IgM-surface-bearing parental hybridomas. The surviving parentals were subsequently enriched repeatedly and screened for IgG-producing clones. The succesive enrichments and screening of IgG-producing hybridomas were repeated twice, followed by two limited-dilution clonings.

This application is particularly useful for laboratories without access to FACS. With these processes, isotype switch variant isolation can be accomplished in a few weeks. Projects utilizing this method have been completed for the Division of Bacterial and Mycotic Diseases (for anti-*Candida albicans* antibodies), and are under way for the Division of Parasitic Diseases (anti-*Giardia* and anti-*Acanthamoeba* antibodies) and the Division of Viral and Rickettsial Diseases. For more information, contact Todd Parker (404-639-4095), John Hart (404-639-3369), or George Gallucci (404-639-3369). ■

25 EIS Officers assigned

NCID received the largest EIS class in its history at the April EIS Conference. The following 25 EIS Officers will join NCID in July 1997.

Division of Bacterial and Mycotic Diseases: Penny M. Adcock, Sharon E. Balter, Thomas Breuer, Michael G. Bruce, Nicholas A. Daniels, James D. Heffelfinger, Julia Y. Morita, Christopher W. Woods

Division of Parasitic Diseases: Sandra Y. Huang, Renu Manjrekar, Mary Mungal

Division of Quarantine: Joy M. Miller, Suzanne B. Zane

Division of Vector-Borne Infectious Diseases: Jeremy G. Bowers

Division of Viral and Rickettsial Diseases: Paul M. Arguin, Catherine Dentinger, Richard S. Garfein, Anthony W. Mounts, Tracee A. Treadwell, Linda V. Venczel

Hospital Infections Program: Michael Bell, Rosemary E. Duffy, Juan A. Echanove, Teresa L. Smith, William E. Trick

NEWS BRIEFS

Mentored projects win awards

Janice Carr, microbiologist, Hospital Infections Program, recently served as mentor on the science projects of two students, both of whom won first place at their respective schools. At Ms. Carr's suggestion, Wesley Sheeley, a high school student in Louisville, Kentucky, and Andrew Carr, a middle school student in Greeneville, Tennessee, designed projects about bacterial contamination of hamburger. The two students isolated bacteria from the meat and sent the isolates to Ms. Carr for identification. During the projects, Ms. Carr provided ongoing information and guidance.

Wesley Sheeley, Louisville, Kentucky

Andrew Carr, Greeneville, Tennessee

New spectrometer installed

The Biotechnology Core Facility Branch, SRP, has installed a laser-desorption mass spectrometer, which measures the molecular weights of biological macromolecules such as proteins and DNA. A detailed description is available under the CDC home page at http://www.cdc.gov/ncidod/srp/biotech/biotech.htm.

Emerging infections slide set updated

A revised set of 40 slides on the current threat of emerging infections (with accompanying technical notes) has been produced by NCID's Office of Health Communication. Previous requestors who have been on a waiting list will receive their copies within 30 days. To obtain a copy, write to the Office of Health Communication, NCID, CDC, 1600 Clifton Rd., MS C-14, Atlanta, GA 30333; fax: 404-639-4194.

Focus on Quarantine

DQ illustrates intraagency cooperation

NCID's Division of Quarantine (DQ) originated in the late 1800s with passage of the National Quarantine Act. The organization became a part of CDC in 1967, based in the Bureau of Epidemiology. Then, it had about 600 employees, and quarantine stations were located at virtually all international airports, seaports, and border crossings.

After studying the program and its relationship to transportation and disease prevention issues in the 1970s, CDC reduced the size of the quarantine program and changed its focus from routine inspection to program management and problem intervention. Quarantine became a part of the National Center for Prevention Services in 1981 and was transferred to NCID in 1995. Robert Wainwright serves as division director, and Tony Perez is deputy director.

DQ's mission has remained the same since its inception: to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the United States. It currently operates eight quarantine stations located in New York, Atlanta, Miami, Chicago, Los Angeles, San Francisco, Seattle, and Honolulu, and two overseas posts in Frankfurt and Bangkok. Each station is responsible for all ports in its region. The staff includes 43 employees in the field and 30 at DQ headquarters.

To accomplish its mission, DQ relies on other inspection agencies—U.S. Immigration and Naturalization Service (INS), U.S. Customs Service (USCS), U.S. Department of Agriculture (USDA), and U.S. Fish and Wildlife Service (USFWS)—to screen for persons and items of public health interest and notify DQ when a situation of public health significance arises. DQ staff then assess the situation, take appropriate action, and involve CDC specialists when necessary.

To ensure awareness of DQ requirements, DQ trains each class of new federal inspectors at INS, USDA, USCS, and USFWS and periodically updates experienced inspectors. DQ also provides guidance on the basis for health-related exclusion of immigrants under provisions of immigration law and responds to immigration emergencies. In recent years, DQ staff have assisted military and other federal agencies with medical screening of migrants at Guantanamo Bay, Cuba; on board the hospital ship *USNS Comfort*; and, most recently, on Guam, where thousands of Kurds were housed before entering the United States.

Rey Fernandez, DQ, outside hospital tent on Guam.

In addition, DQ provides current health information to international travelers through telephone, fax, and Internet services and a widely used book, *Health Information for Travelers*.

According to David Rogers of DQ's Program Operations Branch, "Interagency cooperation makes it possible for DQ to fulfill important statutory and regulatory mandates with a small staff. From this spirit of teamwork comes a unified, dedicated, and continuing effort to protect the health of Americans from imported diseases." ■

Focus on Global Health

The WHO Collaborating Centers

The World Health Organization (WHO), the United Nations agency dedicated to global health, is respected throughout the world for its work in many diverse areas, including the eradication of smallpox and the drive to eradicate polio. But WHO has neither hospital nor laboratory capabilities and far too few staff to independently carry out its many tasks. How then does WHO accomplish its daunting mission? One primary way is by relying on national centers of excellence (WHO collaborating centers) to provide the needed technical capacity that cannot be maintained by WHO headquarters, the regional offices, or the country representatives.

NCID provides WHO with nearly 30 collaborating centers, covering such fields as foodborne disease surveillance, control of epidemic meningitis, measles diagnosis, evaluation of new insecticides, and many others. Each center has specific terms of reference, which normally include training, provision of diagnostic reagents, and assistance in outbreak investigations. In general, WHO offers no financial support for the center's work.

During the past 2 years, NCID has systematically reviewed its collaborating centers to ensure that they are able to fully meet their terms of reference. Most recently, NCID invested $2,000,000 to foster collaborations with other similarly designated centers around the world. This commitment effectively combines the resources of CDC and WHO to jointly address the global challenge of infectious diseases.

James LeDuc, Ph.D.
Associate Director for Global Health

Focus on Parasitic Diseases

New approaches to Chagas' disease control may use genetically engineered bacteria

Researchers in the Division of Parasitic Diseases (DPD) (Ben Beard, Chamblee Campus, and Celia Cordon-Rosales, DPD's Medical Entomology Research and Training Center/Guatemala), in collaboration with scientists at Yale University School of Medicine, are developing an alternative approach to the control and prevention of Chagas' disease, a debilitating and sometimes fatal disease.

Chagas' is caused by the parasitic protozoan *Trypanosoma cruzi,* which is transmitted by insects in the family Reduviidae. *T. cruzi* infects some 16-18 million people, with another 90 million at risk in regions of South and Central America. There is neither a vaccine against it, nor a safe and effective drug to cure it. Traditional control efforts have focused on using insecticides to kill the insects, an approach that is effective, but difficult to coordinate, costly, and can lead to insecticide resistance and toxicity in nontarget species.

Using a strategy termed "vector symbiont intervention" (VSI), Dr.

Rhodnius prolixus, *the primary vector of Chagas' disease in northern South America and Central America.*

Beard and colleagues base their work on the following principles: 1) insects that feed on blood throughout their entire life cycle harbor bacterial symbionts that produce required nutrients lacking in the blood diet; 2) it is possible, in some cases, to isolate these symbionts in culture and genetically transform them, to encode for (produce) a gene product that destroys a pathogen otherwise transmitted by the insect; and 3) these genetically modified symbionts can be substituted for normal symbionts in a wild insect population, resulting in a stable population that cannot transmit human disease.

Applying this novel approach to Chagas' disease, Dr. Beard and his collaborators have produced the first strain of an insect vector of human disease that is virtually incapable of transmitting the disease agent. In a recently published paper (Durvasula et al. Proc Natl Acad Sci USA 1997;94:3274-8), they report the development of a strain of the Chagas' disease vector *Rhodnius prolixus* that can no longer transmit the disease. These "paratransgenic" insects have been reconstituted so that their normal symbionts, *Rhodococcus rhodnii*, have been replaced by genetically modified *R. rhodnii,* which produce a small plasmid-borne peptide that kills the Chagas' disease agent, *T. cruzi*.

Dr. Beard and his colleagues at Yale have also developed a mechanism for introducing these bacteria into wild insect populations.

Laboratory experiments are in progress to assess the efficacy of this approach for Chagas' disease control and evaluate its potential for controlling other insect-borne diseases. "We hope this approach might some day be used to complement insecticide use as part of an integrated approach for controlling Chagas' disease transmission," says Dr. Beard. ■

News Makers

Awards

Gail Cassell, University of Alabama, was presented with a certificate for her outstanding service as chair, NCID Board of Scientific Counselors.

Edith Hambie, OD, has received a Distinguished Service Award from the National School Boards Association in recognition of "unparalleled commitment to America's children through school board leadership and service."

Yury Khudyakov, DVRD, received the 1997 Pekka E. Halonen Award on February 19 for his work in the genetic engineering of antigens used in novel assays for detecting antibodies to hepatitis C and hepatitis E viruses. Dr. Khudyakov, who joined CDC in 1991 as a National Research Council Fellow, has developed several innovative approaches to create a new generation of immunodiagnostic reagents based on the construction of artificial genes.

Roger Nasci, DVBID, has received the Meritorious Service Award from the American Mosquito Control Association (AMCA) for "long and continued service toward the enrichment of the scientific program at the AMCA meetings and for providing special opportunities for young scientist members."

Staff Changes

David Bell, has joined OD, NCID, as assistant to the director for antimicrobial resistance. Since 1987, Dr. Bell has been chief, HIV Infections Branch, HIP. He also served as an EIS Officer from 1979-1981.

continued on page 8

News Makers – continued from page 7

Lynn Erickson, formerly executive aide to the director, is now working as a program analyst with Pat McConnon, program development specialist, OD, NCID.

Meade Morgan has joined NCID as associate director for statistics and information systems. Dr. Morgan previously served as chief, Statistics and Data Management Branch, in the National Center for HIV, STD, and TB Prevention. He joined CDC in 1979 as a statistician in HIP.

Robin Moseley has joined DASTLR as a health communications specialist. She came to CDC in 1989 and previously served as chief of the Information Dissemination Unit in the Technical Information and Communications Branch, Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention.

Susan Waisner, previously secretary to the deputy director, is now serving as secretary to the director, OD, NCID.

Retirements

Renee Black, research biologist, Influenza Branch, DVRD, retired from CDC on March 31 after 31 years of service.

Charlotte Freeman, public health laboratory technician, retired on March 31 after 30 years of service. Since 1985, Ms. Freeman had worked with the Respiratory and Enteric Viruses Branch, DVRD.

Cecelia O'Kelley, biological laboratory technician, DPD, retired on January 31 after 29 years of service.

INSIDE

DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Disease Control and Prevention (CDC)
Atlanta, GA 30333

Official Business
Penalty for Private Use $300
Address Correction Requested

FIRST-CLASS MAIL
POSTAGE & FEES PAID
PHS/CDC
Permit No. G-284

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

recycled paper